

Title (en)
A METHOD OF MAKING SILICON NITRIDE POWDER

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Application
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Priority
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Abstract (en)
[origin: EP0228189A2] A method is disclosed for making a fusable, one component silicon nitride powder. A powder mixture of (a) silicon nitride precursor, e.g., Si(NH)₂, possessing silicon-nitrogen and nitrogen-hydrogen bonds having a purity of equal to or greater than 99.98% and having a very fine particle size, and (b) an oxygen carrying agent effective as a sintering aid, is heated. The heating is carried out in an inert atmosphere at a temperature effectively below the fusion temperature of the mixture (i.e., 1150-1350 DEG C) and for a period of time of at least 4 hours, sufficient to chemically reduce the mixture to grains of silicon nitride bonded and encapsulated by crystallite phases resulting from both the precursor and agent. The fusable powder can then be subjected to forming and heating under fusable temperature conditions to produce a substantially fully densified shape.

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